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=> s cataly? (2a) steam (2a) reform? (p) autothermal (p) series
1354545 CATALY?
210743 STEAM
493 STEAMS
211101 STEAM
(STEAM OR STEAMS)
49993 REFORM?
1332 AUTOTHERMAL
567076 SERIES
9 SERIESSES
567082 SERIES
(SERIES OR SERIESSES)
L1 4 CATALY? (2A) STEAM (2A) REFORM? (P) AUTOTHERMAL (P) SERIES
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MISSING OPERATOR L1 IBIB
The search profile that was entered contains terms or
nested terms that are not separated by a logical operator.

=> d 11 ibib ab 1-4

L1 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 2004:269876 CAPLUS
 DOCUMENT NUMBER: 140:289193
 TITLE: Process for the production of synthesis gas by the
 steam reforming of a hydrocarbon feed
 INVENTOR(S): Aasberg-Petersen, Kim; Dybkjter, Ib; Christensen,
 Peter Seier; Rostrup-Nielsen, Thomas; Erikstrup,
 Niels; Hansen, Jetts-Henrik Bak
 PATENT ASSIGNEE(S): Den.
 SOURCE: U.S. Pat. Appl. Publ., 13 pp.
 CODEN: USXXCO
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND.	DATE	APPLICATION NO.	DATE
US 2004063797	A1	20040401	US 2003-667389	20030923
EP 1413547	A1	20040428	EP 2003-20673	20030911
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
JP 2004149406	A	20040527	JP 2003-331066	20030924
CA 2442491	A1	20040326	CA 2003-2442491	20030925
NO 2003004285	A	20040329	NO 2003-4285	20030925
AU 2003248389	A1	20040422	AU 2003-248389	20030925
ZA 2003007450	A	20040706	ZA 2003-7450	20030925
KR 2004027440	A	20040401	KR 2003-66831	20030926
CN 1498850	A	20040526	CN 2003-164880	20030926
PRIORITY APPLN. INFO.:			DK 2002-1435	A 20020926

AB A process and system for the production of synthesis gas (i.e., H₂-CO mixts.) from a hydrocarbon feed (e.g., natural gas) comprises endothermic and/or adiabatic catalytic steam reforming and autothermal steam reforming in series, where the steam reforming is carried out in one or more endothermic stages in series or in one or more adiabatic steam reforming stages in series with intermediate heating of the feed stock gas leaving the adiabatic reforming stages and where the carbon monoxide-containing gas, characterized by having a molar ratio of hydrogen to carbon of less than 4.5, is added prior to at least one of the endothermic or adiabatic steam reforming stages and/or prior to the autothermal steam reforming step. Process flow diagrams are presented.

L1 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 2004:260992 CAPLUS
 DOCUMENT NUMBER: 140:256073
 TITLE: Production of synthesis gas by autothermal steam reforming
 INVENTOR(S): Erikstrup, Niels; Bak Hansen, Jens-Henrik;
 Rostrup-Nielsen, Thomas; Dybkjaer, Ib; Christensen,
 Peter Seier; Aasberg-Petersen, Kim
 PATENT ASSIGNEE(S): Haldor Topsoe A/S, Den.
 SOURCE: Eur. Pat. Appl., 14 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1403216	A1	20040331	EP 2003-20677	20030911
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,				

	IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK			
JP 2004269343	A 20040930	JP 2003-329354	20030922	
CA 2442770	A1 20040326	CA 2003-2442770	20030925	
NO 2003004284	A 20040329	NO 2003-4284	20030925	
US 2004063798	A1 20040401	US 2003-669375	20030925	
US 7074347	B2 20060711			
AU 2003248393	A1 20040422	AU 2003-248393	20030925	
ZA 2003007447	A 20040701	ZA 2003-7447	20030925	
KR 2004027448	A 20040401	KR 2003-66872	20030926	
CN 1496954	A 20040519	CN 2003-164881	20030926	
PRIORITY APPLN. INFO.:		DK 2002-1433	A 20020926	
		DK 2002-1434	A 20020926	

AB Synthesis gas is produced by catalytic steam reforming of a hydrocarbon containing feedstock in parallel in an autothermal steam reformer and in at least one steam reformer in series, the heat for the steam reforming reactions in the steam reformers being provided by indirect heat exchange with the combined effluents from the steam reformers with the autothermal steam reformer, and wherein carbon monoxide containing gas is added to the feedstock prior to the steam reforming in the autothermal steam reformer and/or prior to the steam reforming in the steam reformers, the CO containing gas having a molar ratio of hydrogen to carbon of <4.5 and being added in an amount resulting in a product stream having a molar ratio of hydrogen to CO of 1.8-2.3. The steam reforming catalyst of a 2st reformer contains Ni and the catalyst of a last steam reformer contains a noble metal. The oxidant of the autothermal steam reformer contains ≥ 90 volume% of oxygen. The CO containing gas is tail gas from a Fischer-Tropsch process.

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2000:160979 CAPLUS

DOCUMENT NUMBER: 132:196415

TITLE: Process and reactor system for manufacture of synthesis gas

INVENTOR(S): Dybkjaer, Ib

PATENT ASSIGNEE(S): Haldor Topsoe A/S, Den.

SOURCE: Eur. Pat. Appl., 4 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 983963	A2	20000308	EP 1999-114335	19990721
EP 983963	A3	20001004		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
DK 9801098	A	20000302	DK 1998-1098	19980901
DK 173742	B1	20010827		
NO 9904029	A	20000304	NO 1999-4029	19990820
NZ 337468	A	20010126	NZ 1999-337468	19990826
ZA 9905562	A	20001003	ZA 1999-5562	19990830
US 6224789	B1	20010501	US 1999-385724	19990830
CN 1246441	A	20000308	CN 1999-118408	19990831
CN 1124226	B	20031015		
AU 9944887	A1	20000316	AU 1999-44887	19990831
AU 753603	B2	20021024		
JP 2000185906	A	20000704	JP 1999-245109	19990831

PRIORITY APPLN. INFO.:

AB A process is disclosed for production of H₂- and/or CO-rich synthesis gas from

a hydrocarbon feed by catalytic steam reforming. A 1st stream of the feedstock is autothermally steam reformed in parallel with a 2nd stream of the feedstock which is steam reformed in the presence of a fixed-bed steam-reforming catalyst in a heat-conducting relation with a hot effluent from the autothermal steam reforming and with a steam-reformed hot effluent withdrawn from the steam-reforming catalyst. The effluent from the autothermal steam-reforming step and the heat-exchange steam-reforming step are combined after supplying heat to steam-reforming reactions proceeding in the 2nd stream of the feedstock. A reactor system comprises an autothermal reforming reactor and a heat-exchange reactor connected in parallel at inlet side of the reactors and connected in series at an outlet side of the autothermal reactor.

L1 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1985:473911 CAPLUS
DOCUMENT NUMBER: 103:73911
TITLE: Fuel cell electric power production
INVENTOR(S): Hwang, Herring Shinn; Heck, Ronald M.; Yarrington, Robert M.
PATENT ASSIGNEE(S): Engelhard Corp., USA
SOURCE: U.S., 14 pp. Cont. of U.S. Ser. No. 430,455 abandoned
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4522894	A	19850611	US 1984-599865	19840413
PRIORITY APPLN. INFO.:			US 1982-430455	A1 19820930

AB In fuel-cell power generation a H-rich fuel is generated by treating a hydrocarbon feed in an autothermal reformer using a 1st monolithic catalyst zone having Pd and Pt catalytic components and a 2nd Pt-group metal steam-reforming catalyst. Air is used as the oxidant in the hydrocarbon reforming zone and a low O:C ratio is maintained to control the amount of dilution of the H-rich gas with N of the air without sustaining an insupportable amount of C deposition on the catalyst. Anode vent gas may be used as the fuel to preheat the inlet stream to the reformer. The fuel cell and the reformer are preferably operated at elevated pressures, .1torsim.150 psia for the fuel cell. Thus, a series of Pt-Pd partial oxidation monolithic catalyst comps. was prepared. Generally, as the S content of the hydrocarbon feed being treated in the 1st catalyst zone increases, a higher Pt:Pd ratio is preferred. The reverse is true for feeds with relatively high CH4 content. The steam-reforming catalyst may use a monolithic or a particulate (spheres, extrudates, granules, shaped members) support. The use of the Pt-Rh steam-reforming catalyst attained an .apprx.100% conversion of the Number 2 fuel oil vs. 96.7% when the Ni catalyst was used. When Ni catalyst was used, a rapid increase in the reactor pressure drop was observed